

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A field interpolation method determination device ~~(6,8a)~~ for determining whether to perform either an inter-field interpolation method or an intra-field interpolation method on fields of an inputted interlaced signal ~~(V_{in})~~ to provide conversion to a progressive signal ~~(V_{pr})~~, the device comprising:

pixel level difference detection means ~~(6,81)~~ for detecting a pixel level difference ~~(S_{pA})~~ between the input interlaced signal ~~(V_{in})~~ and a 1-field delay input interlaced signal ~~(V_{d1})~~ obtained by delaying the input interlaced signal ~~(V_{in})~~ by one field;

field correlation detection means ~~(6,81,82,83,84)~~ for detecting correlation between the input interlaced signal ~~(V_{in})~~ and the 1-field delay input interlaced signal ~~(V_{d1})~~ based on the pixel level difference ~~(S_{pA})~~, and outputting inter-field correlation determination signals ~~(D_f)~~;

inter-field correlation storage means ~~(85,86,87,88)~~ for storing N-1 inter-field correlation determination signals ~~(D_f:R1,R2,R3,R4)~~ corresponding to N sequential fields of the input interlaced signal;

field/frame correlation determination means ~~(89,90)~~ for determining, based on a pattern of values ~~(R1,R2,R3,R4)~~ of the N-1 inter-field correlation determination signals, whether the N sequential fields are either 2-2 or 2-3 pulldown-converted; ~~and~~

counter means for incrementing a count value by one count if the N sequential fields are determined to have been either 2-2 or 2-3 pulldown-converted, for resetting the count value if the N sequential fields are determined to have been neither 2-2 nor 2-3 pulldown-converted, and for maintaining the count value if otherwise; and

interpolation method determination means ~~(91)~~ for determining, as an interpolation

method, inter-field interpolation if the count value is greater than a predetermined value, ~~fields are determined to have been either 2-2 or 2-3 pulldown-converted~~, or intra-field interpolation if ~~the fields are determined to have been neither 2-2 nor 2-3 pulldown-converted~~ count value is less than or equal to the predetermined value.

2-5. (Canceled)

6. (Currently Amended) A field interpolation method determination device ~~(6,8a)~~ according to claim 1, wherein if the input interlaced signal ~~(Vin)~~ is ~~[[a]]~~ 2-3 pulldown-converted, N is equal to or more than 6.

7. (Currently Amended) A field interpolation method determination device ~~(6,8a)~~ according to claim 1, wherein if the input interlaced signal ~~(Vin)~~ is ~~[[a]]~~ 2-2 pulldown-converted, N is equal to or more than 5.

8. (Currently Amended) A field interpolation method determination device ~~(6,8a)~~ according to claim 1, wherein if at least two sequential signals among the N-1 inter-field correlation determination signals ~~(R1,R2,R3,R4)~~ indicate absence of correlation, the field/frame correlation determination means ~~(89,90)~~ determines that the N sequential fields of the input interlaced signal have been neither 2-2 nor 2-3 pulldown-converted.

9. (Currently Amended) A field interpolation method determination device ~~(6,8a)~~

according to claim 1, wherein if the N-1 inter-field correlation determination signals ~~(R1,R2,R3,R4)~~ alternately indicate presence and absence of correlation, the field/frame correlation determination means ~~(89,90)~~ determines that the N sequential fields of the input interlaced signal have been either 2-2 or 2-3 pulldown-converted.

10. (Currently Amended) A field interpolation method determination device ~~(6,8a)~~ according to claim 1, wherein the field correlation detection means ~~(6,81,82,83,84)~~ includes:

pixel difference determination means ~~(82)~~ for determining for each pixel whether the pixel signal level difference ~~(SpA)~~ is greater than a first threshold ~~(X)~~ which indicates a predetermined pixel level and outputting a pixel unit level difference determination result ~~(Dp)~~ represented by a binary value;

field unit level difference determination means ~~(83)~~ for adding one field to the pixel unit level difference determination result ~~(Dp)~~, and outputting a field unit level difference determination result ~~(CDp)~~; and

inter-field correlation determination means ~~(84)~~ for determining whether inter-field correlation is significant based on whether the field unit level difference determination result ~~(CDp)~~ is greater than a second threshold ~~(Y)~~ indicating a predetermined number of pixels.

11. (Currently Amended) A field interpolation method determination device ~~(6,8a)~~ according to claim 10, wherein

the inter-field difference determination means ~~(6,81,82,83,84)~~ further includes:

signal level detection means ~~(94b)~~ for detecting a signal level ~~(PL)~~ indicating

brightness of an image represented by the 1-field delay input interlaced signal (~~Vd1~~); and

first threshold change means (~~95b~~) for changing the first threshold (~~Xb~~) based on a value of the signal level (~~PL~~).

12. (Currently Amended) A field interpolation method determination device (~~6,8a~~) according to claim 10, wherein

the inter-field difference determination means (~~6,81,82,83,84~~) further includes:

signal level detection means (~~94b~~) for detecting a signal level (~~PL~~) indicating brightness of an image represented by the 1-field delay input interlaced signal (~~Vd1~~); and

second threshold change means for changing the second threshold (~~Y~~) based on a value of the signal level (~~PL~~).

13. (Currently Amended) A field interpolation method determination device (~~6,8e,10~~) according to claim 1, wherein

the inter-field difference determination means (~~6,81,82,83,84~~) further includes:

field identification means (~~10~~) for outputting, based on the 1-field delay input interlaced signal (~~Vd1~~), a field identification signal (~~Doe~~) which indicates whether a field of the 1-field delay input interlaced signal (~~Vd1~~) is an even field or an odd field; and

an AND circuit (~~96e~~) for calculating a logical product (~~Dfa~~) of the field identification signal (~~Doe~~) and the inter-field correlation determination signal (~~Df~~), and outputting the product to the inter-field difference storage means (~~85-88~~).

14. (Currently Amended) A field interpolation method determination device
(~~6,8e,10,22d,24d~~) according to claim 13, wherein the inter-field difference determination means
(~~6,81,82,83,84~~) further includes:

an inverter (~~22d~~) for outputting a reversed signal (~~nDoe~~) of the field identification
signal (~~Doe~~); and

a field identification signal reverse switch (~~24d~~) for selectively outputting either
the field identification signal (~~Doe~~) or the reversed signal (~~nDoe~~) to the AND circuit (~~96e~~).